Does There Need to be a Snowpack to Get Sub-Zero Temperatures in the Ohio Valley?

The latest forecast calls for a bitterly cold air mass to work into the Ohio Valley for the first full week of 2014. Some guidance calls for temperatures well below zero for lows. The big question regarding how low temperatures get will be whether or not snow is on the ground. After accumulating snows on Thursday, accumulations look possible again on Sunday as an area of low pressure moves into the Ohio Valley. Quite a bit of uncertainty remains regarding the track of this surface low on Sunday, which will ultimately affect snowfall amounts. So how much of our sub-zero temperature threat next week hinges on snow being on the ground from these two systems? Let's take a look at history to find out!

Site	Year	Month	Day	Temperature	Snow Cover
Louisville (SDF)	1994	1	19	-22	15
Louisville (SDF)	1994	1	18	-16	16
Louisville (SDF)	1996	2	4	-7	T
Louisville (SDF)	2004	1	31	-5	2
Louisville (SDF)	1994	1	15	-3	T
Louisville (SDF)	1996	2	5	-2	T
Louisville (SDF)	**2009**	**1**	**16**	**-1**	**0**
Louisville (SDF)	1996	2	3	-1	1

The chart above depicts all recorded sub-zero temperatures for Louisville (SDF) since 1990. The red indicates the *only* date that managed to get below zero without any snow cover. Interestingly, two days fell below zero with only trace amounts.

Site	Year	Month	Day	Temperature	Snow Cover
Lexington (LEX)	1994	1	19	-20	10
Lexington (LEX)	1994	1	18	-17	10
Lexington (LEX)	1994	1	21	-12	9
Lexington (LEX)	1996	2	4	-10	2
Lexington (LEX)	1994	1	16	-8	1
Lexington (LEX)	1994	1	15	-7	1
Lexington (LEX)	2003	1	27	-7	1
Lexington (LEX)	2004	1	31	-6	1
Lexington (LEX)	1996	2	5	-4	1
Lexington (LEX)	**2009**	**1**	**16**	**-3**	**0**
Lexington (LEX)	2011	1	22	-2	3
Lexington (LEX)	1996	2	3	-2	3
Lexington (LEX)	2009	2	5	-1	3

The chart above depicts all recorded sub-zero temperatures for Lexington (LEX) since 1990. The red indicates the *only* date that managed to fall below without any snow cover. Interestingly, it was also the same day Louisville (SDF) fell below zero without any snow cover!